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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,076	02/15/2006	Gerhard Wanger	WANGER -3 PCT	2640
25889	7590	07/12/2006	EXAMINER	
WILLIAM COLLARD COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			MCNAULL, ALINE D	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/540,076	Applicant(s) WANGER, GERHARD	
	Examiner Aline D. McNaul	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-15-2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendments to claims 1-8 filed on 2/15/2006 are acknowledged and accepted.

The amendments to the specification filed on 2/15/2006 are acknowledged and accepted.

Specification

The disclosure is objected to because of the following informalities: Examiner is unsure of which patent is being referred to on page 1, line 24. Examiner has taken this to mean the patent application 10/540,076, if this is the case Examiner requests that Applicant change the term "patent" to --patent application--.

Appropriate correction is required.

Claim Objections

Claims 1-8 are objected to because of the following informalities:

Claim 1, line 5 is objected to because items 6 and 7 are both referred to as "at least one further surface." This is potentially problematic because one cannot determine if the at least one further surface refers to item 6 or item 7. Also, Examiner would like to note that the phrase "for the purpose of deflecting a laser beam" is a statement of intended use and thus is not given significant patentable weight.

Claim 7, is objected to because items 19, 20, 21, and 22 refer to "at least two further surfaces." This is potentially problematic because one cannot determine to which of these items the at least two further surfaces refers.

Claim 8 is objected to because items 19, 20, 21, and 22 refer to "at least two further surfaces." This is potentially problematic because one cannot determine to which of these items the at least two further surfaces refers.

Claims 2-8 depend on claim 1 and thus inherit the deficiencies of claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Harig et al., United States Patent No. 5,357,375, herein after Harig.

Regarding Claim 1, Harig teaches an optical element to be mounted on a shaft, in particular a spindle shaft, for the purposes of deflecting a laser beam (see abstract lines 1-3 and column 4 lines 64-68 and column 5 lines 1-10), the laser beam being deflected via a first mirror face and a second mirror face (see items 4 and 5 in figures which are partially mirrored exit faces), wherein at least one further surface is provided

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for the purpose of compensating for the centrifugal forces and gyroscopic moments of the optical element (see surface 6 in figures).

Regarding Claim 2, Harig teaches an optical element wherein the further surface is mounted at an angle of 25 degrees to 65 degrees with respect to the perpendicular of the axis of rotation of the shaft (see item 6 wherein the surface is mounted at an angle in the range 50 degrees to 70 degrees).

Regarding Claim 3, Harig teaches an optical element wherein the further surface is mounted at an angle of 37.5 degrees to 80 degrees with respect to the perpendicular of the axis of rotation to the shaft (see item 7 in figures wherein the surface is mounted at an angle of 50 degrees to 70 degrees).

Regarding Claim 4, Harig teaches an optical element wherein the first mirror face has edges and, whose distance from the axis of rotation of the shaft is between 15% and 35% of the outer diameter of the optical element (see figure 1 wherein the distance of item 4 from the axis of rotation is 15% to 35% of the outer diameter of the optical element).

Regarding Claim 5, Harig teaches an optical element wherein the second mirror face has edges and, the edge being arranged at a distance of 45% to 110% of the diameter of the laser beam from the axis of rotation of the shaft (see item 5 in figure 1).

Regarding Claim 7, Harig teaches an optical element wherein at least two further surfaces are provided for the purpose of compensating for the centrifugal forces and the gyroscopic moments of the optical element (see items 6 and 7 in figure 1).

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Regarding Claim 8, Harig teaches an optical element wherein the further surfaces are arranged at angles of 60 degrees to 120 degrees with respect to one another (see figure 1 items 6 and 7 wherein they are angled at a range of 100 degrees to 140 degrees with respect to one another).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harig in view of Ikegame, United States Patent No 6,061,164, herein after Ikegame.

Regarding claim 6, Harig teaches an optical element as set forth above.

Harig lacks teaching an optical element wherein the optical element is fixed to the shaft via an S-shaped joint.

Ikegame teaches an optical element wherein the optical element is fixed to the shaft via an S-shaped joint (see figure 10, item 51 is an S-shaped spring joint).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to make the optical element as taught by Harig fixed to a shaft via an S-shaped joint as taught by Ikegame because the S-shaped joint improves the accuracy of the spring apparatus.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chadwick et al, United States Patent No 4,659,192 discloses a manipulator which rotates around an axis having a plurality of mirror faces.

Tonigo United States Patent No 6,282,008 B1 discloses a scanning optical system with deflecting mirrors.

Jimbou et al, United States Patent No 4,367,017 discloses a laser beam reflection system having a plurality of reflecting surfaces.

Karube et al, United States Patent No 4,258,246 discloses a rotator balancing device utilizing a laser beam which corrects the unbalance of a rotator.

PCT WO 90/15355 discloses a light scanning system which reduces the effects of wobble.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aline D. McNaul whose telephone number is 571-272-8043. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ADM
ADM
6/26/2006



DREW A. DUNN
SUPERVISORY PATENT EXAMINER